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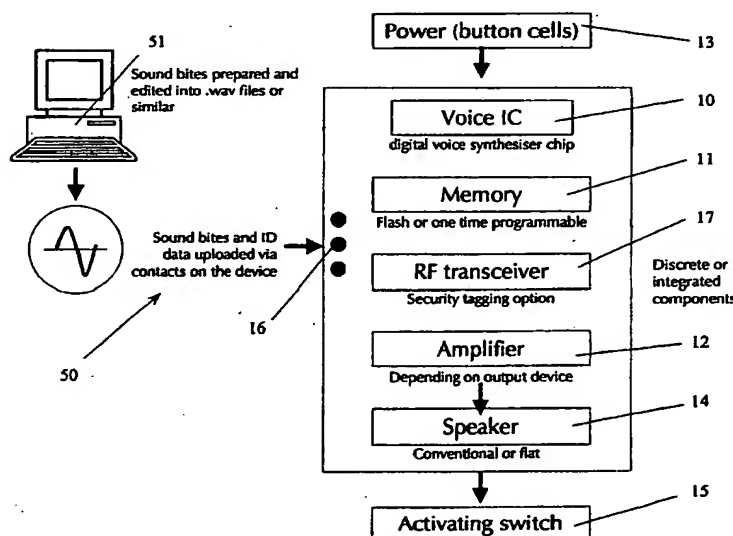
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **PACKAGING CONTAINER AND METHOD**



(57) Abstract: A packaging container (20) includes an audio integrated circuit (10) capable of converting digital audio data into electrical audio signals, connected to or integrated with a memory (11) for providing digital audio data to the audio integrated circuit. The memory has an input (16) through which digital audio data can be uploaded to the memory during the packaging process. A speaker (14) receives electrical audio signals from the audio integrated circuit (10) for reproducing corresponding sound signals. A battery (13) is connected to power the audio integrated circuit and the transducer, and a manually actuatable switch (15) causes the audio integrated circuit to operate to receive digital audio data from the memory and to provide electrical audio signals to the speaker (14) for reproduction of audio material.

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The present invention relates to packaging containers and, more particularly, to a packaging container capable of providing enhanced information to a potential purchaser of the product contained within the packaging container.

The invention has particular utility in the consumer product area especially in the marketing and selling of CDs, DVDs, video cassettes, books and the like, but is not limited thereto.

There is often a need to provide significant enhanced information to potential buyers of CDs, DVDs and the like at the point of sale and this requirement is normally met by allowing potential purchasers to play an audio selection or sample of a CD or DVD before purchase. This involves the purchaser requesting the playing of a CD/DVD or the like from staff within the store and then putting on a headset to listen to parts of a selection of the tracks or other set of samples. However, this process obviously wastes time on the part of both the potential buyer and the sales staff and the initial installation of the necessary equipment to enable playback of samples is costly. Furthermore, of course, only a limited number of potential purchasers can use the equipment at any one time.

According to a first aspect of the present invention there is provided therefore a packaging container having a housing and, disposed therein,

an audio integrated circuit (or 'voice chip') capable of converting digital audio data into electrical audio signals;

a memory connected to or integral with the audio integrated circuit for providing digital audio data to the audio integrated circuit;

an input connected to the memory through which digital audio data can be uploaded to the memory;

a transducer for receiving electrical audio signals from the audio integrated circuit and reproducing corresponding sound signals therefrom;

a battery connected to power the audio integrated circuit and the transducer; and

a manually actuatable switch for causing the audio integrated circuit to operate to receive digital audio data from the replaceable memory and to provide electrical audio signals to the transducer for reproduction of audio material.

5 By loading into the memory, which may be a random access memory (RAM), flash memory, or the like or which may be a one-time programmable memory such as an EPROM and which may be part of the voice chip, digital data corresponding to samples of one or more tracks of a CD, DVD or the like, and enabling them to be listened-to by a potential purchaser simply by manual actuation of the switch on the
10 container, enhanced information can be provided to a potential purchaser.

The packaging containers according to the invention are not limited to CD, DVD, etc., packaging containers but may comprise containers of almost any description and type. For example, packaging may be applied to books and the digital
15 data held in the replaceable memory may be passages from the book or else descriptive material related to its contents. Similarly, instructions for the use of or other information about other consumer products may be provided, or even instructions for the use of medicines and the like.

20 However, particularly in the consumer product area and, more particularly, the entertainment area, there exists a desire on the part of potential purchasers to sample information before making a purchase and the conventional containers for CDs, DVDs and the like already contains sufficient unused space to house the various components, making it a relatively simple procedure to fit the required components
25 without major redesign of the conventional packaging container.

Having electronic components such as those mentioned above, particularly an integrated circuit chip, may also allow for RF ID tagging of packaging containers to be added relatively simply.

30 The invention also includes a method of packaging a consumer product, the method comprising uploading digital data to the replaceable memory of a packaging container according to the first aspect of the invention through the input; inserting the product into the packaging container; and thereafter
35 sealing the container.

In the case of a flexible manufacturing process in which different versions of the product or different products themselves can be inserted in the same packaging, a data base of digital data samples may be maintained and synchronised with the process for inserting the product into the packaging containers in order to associate appropriate sound samples with corresponding products. This is particularly useful in the case of CD or DVD production and the like where the manufacturing process involves the insertion, over time, of different batches of CDs/DVDs by different artists so that sound samples corresponding to tracks on respective CDs/DVDs can be properly associated with the respective CDs/DVDs, etc.

The invention has application in many areas, as mentioned above, but a few of which are audio CDs, DVDs, video cassettes and similar entertainment products, computer software, books, food packaging, medicine packaging and the like.

One example of a packaging container according to the present invention and a method of packaging a product will now be described with reference to the accompanying drawings in which:-

Fig 1 is a block diagram of components to be incorporated in a packaging container;

Figs 2A to C are various views of a packaging container for CDs or DVDs;

Fig 3 is a block diagram illustrating the individual steps of manufacturing and packaging a CD/DVD; and

Fig 4 is a chart illustrating the type of content that may be stored in the replaceable memory according to the invention, relating to particular applications.

In order to provide sound bytes to a potential purchaser of a CD or DVD, the various components shown in Fig 1 are assembled within the packaging container shown in Figures 2A to C.

The components shown in Fig 1 include a so-called "voice chip" 10 or audio integrated circuit in the form of a digital voice synthesiser chip, to which is connected flash memory 11 and an amplifier 12. These three components, in particular, are preferably provided in a single application specific integrated circuit, ASIC 40 (see figure 3), but may be discrete components if desired. Power is supplied to the voice chip 10 and amplifier 12 from button cell batteries 13 and the amplifier 12 feeds a

small speaker 14, the voice chip and amplifier being actuated by a switch 15. An input 16 having appropriate terminals is provided to allow uploading of digital data into the memory 11. If desired and as shown, an RF transceiver 17 (in the form of an RFID transceiver) may be incorporated (either as another component integral with the voice chip or as a separate component) to provide for security coding of the CD or DVD, security data being uploaded/downloaded at the time of manufacture and/or at the point of sale. The incorporation of an RF transceiver 17 may also allow removal of the need for the input 16, voice data being uploaded through the same transceiver.

All of these components can be located within free space which is available within the CD/DVD container or case 20 shown in Figure 2A to C. Within the conventional CD/DVD container or case 20 there is sufficient unused volume to allow location of the individual components within, for example, the spine area 21 and the adjacent areas 22 of the support tray 23 immediately surrounding the CD/DVD. These areas are provided, behind the internal CD support tray 23 which is located internally of the CD/DVD case as a separate component, between the support tray and the rear wall or bottom part 24 of the case, as shown in Figures 2A to C. As can be seen in Figure 2A, the operating switch 15, in the form of a button, can be provided on the front of the spine which is exposed at the front of the case, located in a slot 25 formed in the front face of the spine 21 of the internal support tray 23. The remaining components can be disposed elsewhere within the spine 21 and the boarder areas 22 as desired.

One method of packaging consumer products, in the form of CDs/DVDs, is shown in block diagram form in Figure 3. Here can be seen all the various steps involved in the production and sale of a CD/DVD, including, within the recording studio, production of the music by an artist 31 and creation of a CD/DVD master 32. From the CD/DVD master 32 individual CDs/DVDs can be "burned" in a conventional process (not shown) and a magazine of finished CDs/DVDs 33 can be produced, CDs/DVDs then being picked one-by-one from the magazine at a suitable insertion station 44 for insertion into the CD/DVD case 20.

Elsewhere, voice chips 20 are manufactured at a chip manufacturing facility 40, assembled into an electronics package 41, and then loaded (at 42) onto CD/DVD support trays (or 'jewel cases') 23 which have been prior manufactured, together with

other CD/DVD case parts. The CD/DVD support trays 23 are supplied, in parallel with the other CD/DVD case parts, to a pre-insertion station 45 and sound bytes are uploaded, through contacts 16 or through the RF transceiver (not shown in Figure 3), as indicated at 50, appropriately sequenced with the loading of particular CDs/DVDs, having been previously selected and stored on a suitable computer system 51. Suitable ID data may also be uploaded in the same or (as shown) a separate operation 52. A magazine 46 of support trays 23 is then assembled and from the magazine, at a later step, the support trays 23 are then inserted into outer casing parts 24, 26 along with the usual "sleeve notes" and the CD/DVD 33 at the insertion station 44. The usual final packaging or wrapping is then applied at 60 before distribution to retail outlets 61.

In another example of the present invention this computer system 51 may belong to a consumer and may be a standard PC, laptop, digital recording or playback device (for example an MP3 player) or any other device capable of producing a data stream that may be linked via a routing device to the contacts 16. This would allow the user to upload snatches of audio data in the form of, for example, .wav files to the memory.

In a further example of the present invention electronic uploads may be made at the retail or distribution outlet at the point of purchase. This would allow the retailer to add further information about the retailer, for example in the form of an advertisement as well as information about when the CD was purchased.

It can be appreciated from Figure 3 that there is minimum disruption to conventional CD production processes, requiring only the addition of a suitable computer for example to hold a database of the sound bytes corresponding with particular CDs/DVDs and the addition of contacts or the like to enable upload of the sound bytes through the input 16 into the replaceable memory 11.

Figure 4 illustrates various examples of applications to which the invention is applicable, together with the types of data which might be used for reproduction in each case.

CLAIMS

1. A packaging container having a housing and, disposed therein,
an audio integrated circuit capable of converting digital audio data into electrical
5 audio signals;
a memory connected to or integral with the audio integrated circuit for providing
digital audio data to the audio integrated circuit;
an input connected to the memory through which digital audio data can be
10 uploaded to the memory;
a transducer for receiving electrical audio signals from the audio integrated
circuit and reproducing corresponding sound signals therefrom;
a battery connected to power the audio integrated circuit and the transducer;
and
15 a manually actuatable switch for causing the audio integrated circuit to operate
to receive digital audio data from the memory and to provide electrical audio signals
to the transducer for reproduction of audio material.
2. A packaging container according to claim 1, wherein the audio integrated circuit
includes a digital voice synthesiser chip.
- 20 3. A packaging container according to claim 1 or claim 2, wherein the audio
integrated circuit includes an amplifier.
4. A packaging container according to any of claims 1 to 3, wherein the audio
25 integrated circuit comprises an ASIC.
5. A packaging container according to any of claims 1 to 4, further including an RF
transceiver to provide for RF ID tagging of the package.
- 30 6. A packaging container according to any of claims 1 to 4, wherein the packaging
container is a case for a CD, DVD, audio or video tape or the like.

7. A method of packaging a consumer product, the method comprising uploading through the input digital data to the memory of a packaging container according to any of claims 1 to 6;

inserting the product into the packaging container; and thereafter
sealing the container.

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8. A method according to claim 7, further including maintaining a database of digital data samples and synchronising the uploading of the digital data samples to the memory with the process for inserting the product into the packaging containers in order to associate appropriate sound samples with corresponding products.

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9. A method according to claim 7 or claim 8, applied to the packaging of CDs, DVDs, audio or video cassettes or the like.

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10. A method according to claim 7 or claim 8, applied to the packaging of books.

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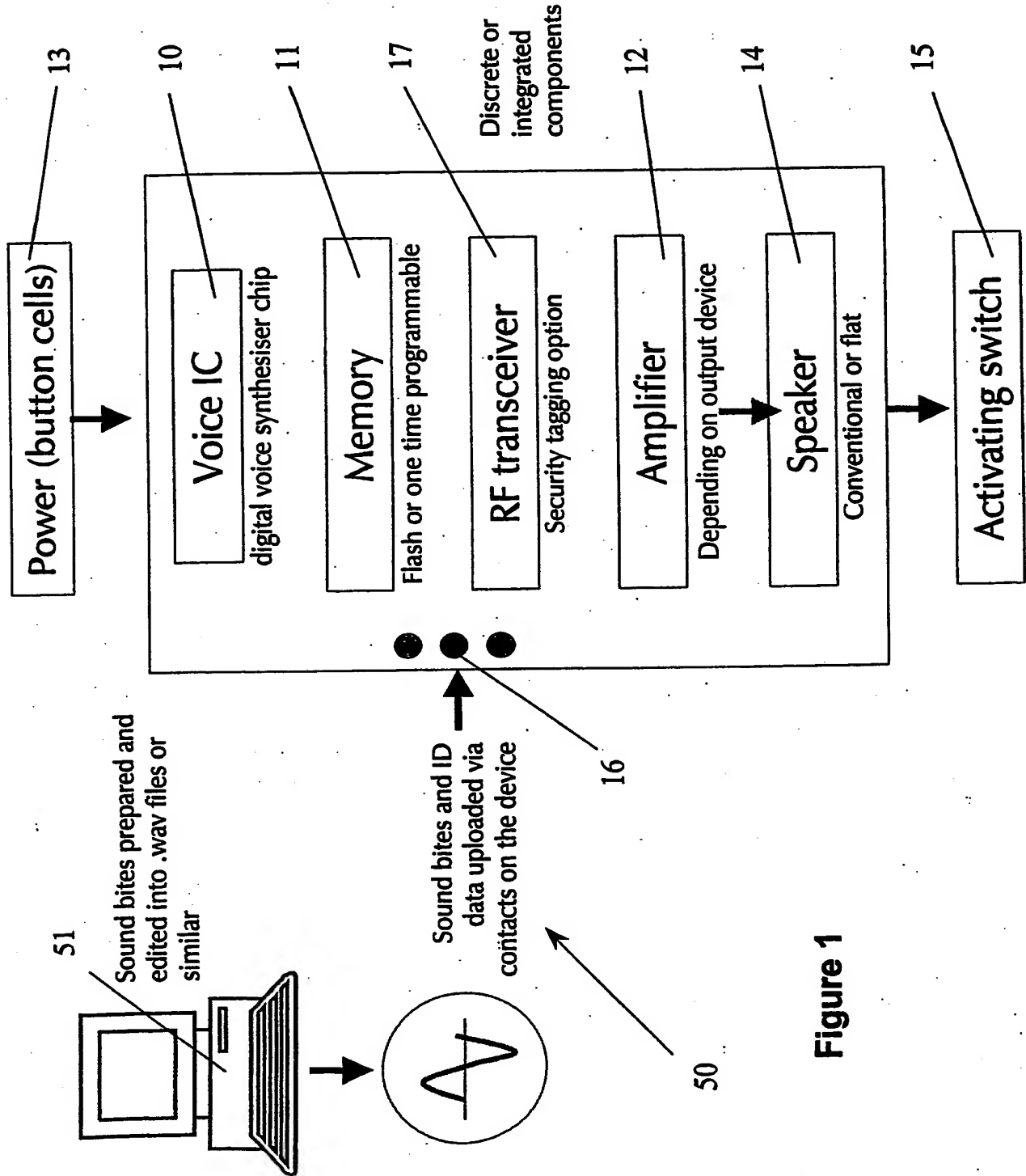


Figure 1

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Figure 2B

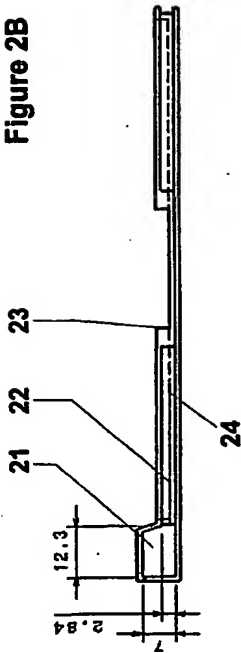


Figure 2C

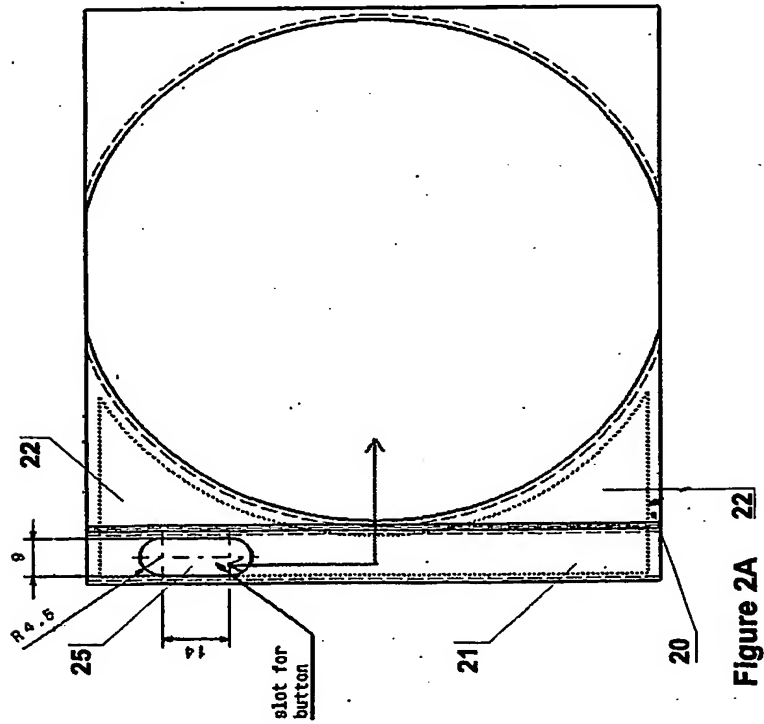
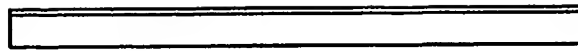


Figure 2A

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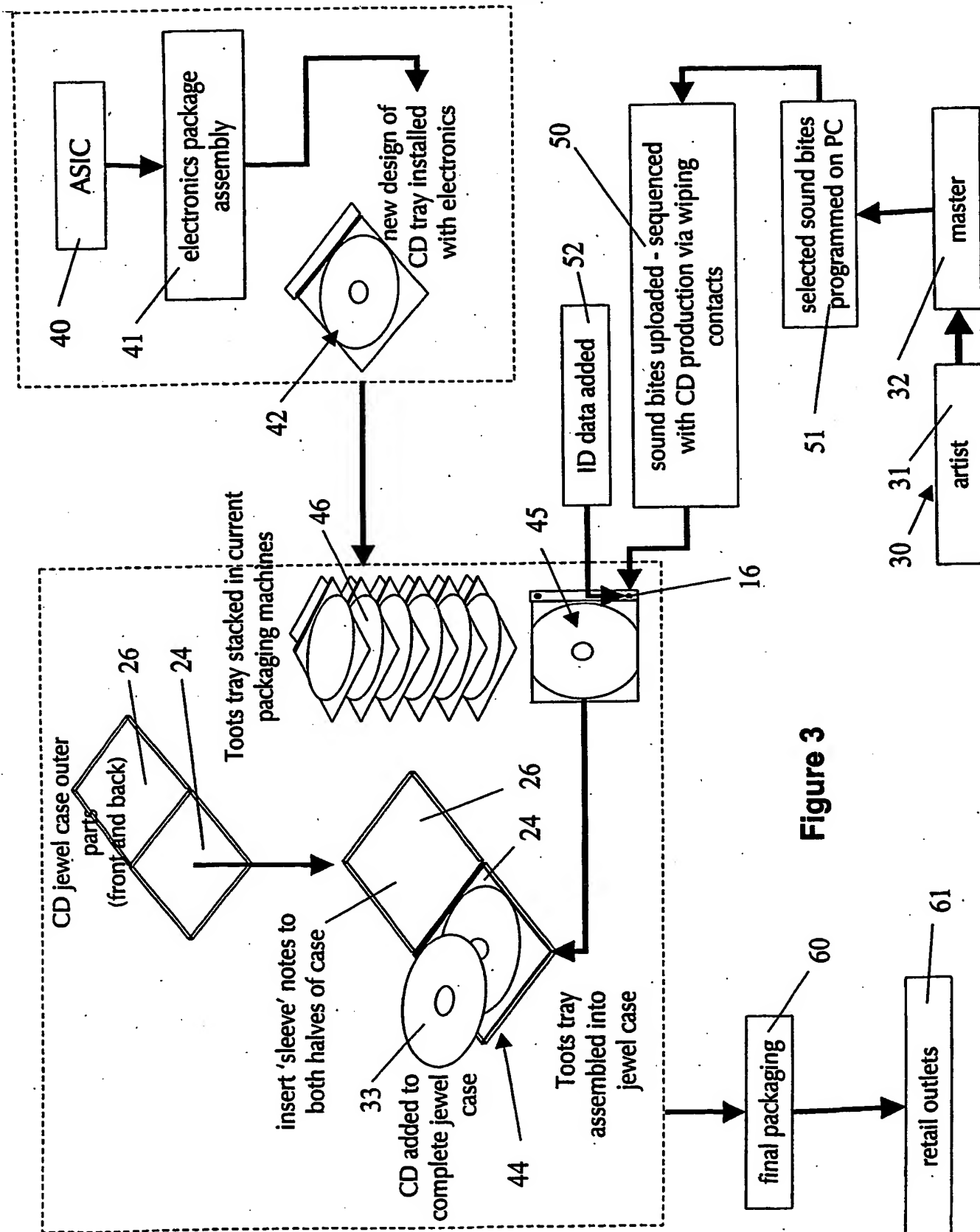


Figure 3

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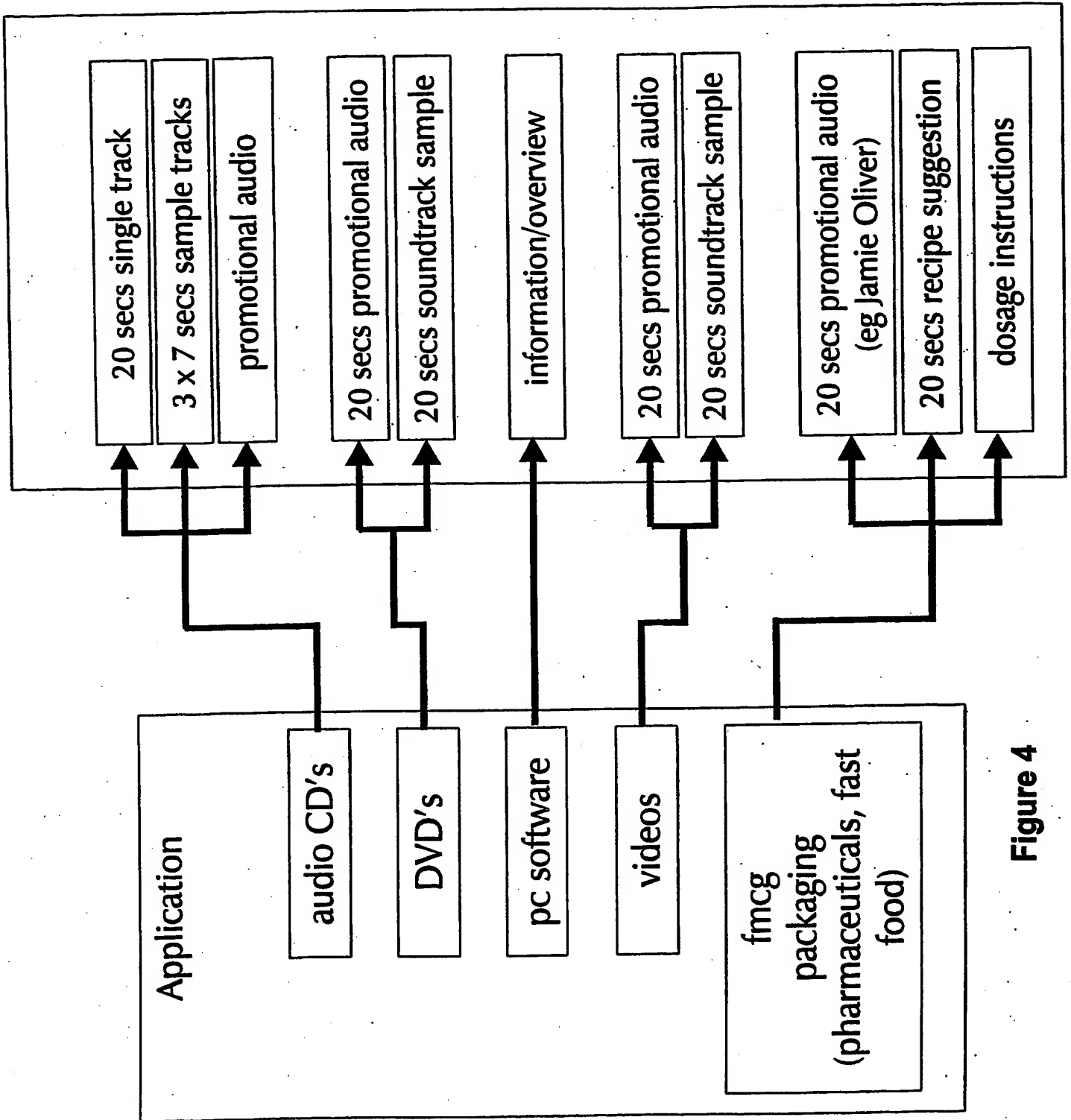


Figure 4

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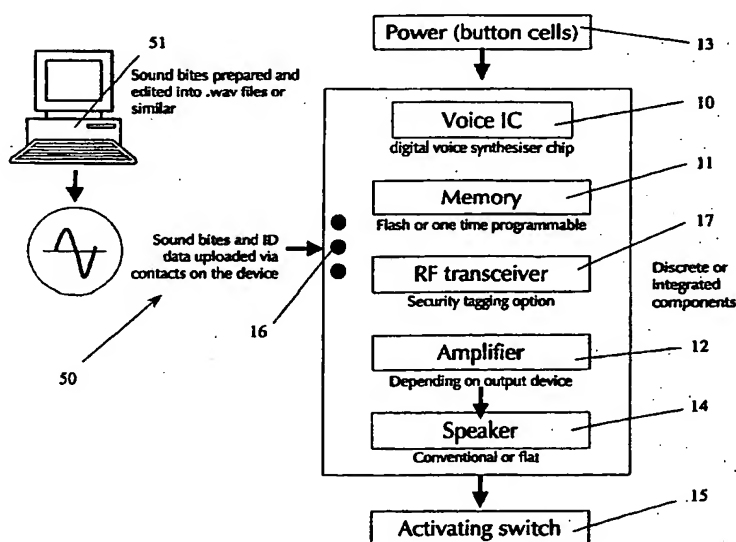
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(54) Title: **PACKAGING CONTAINER AND METHOD**



(57) Abstract: A packaging container (20) includes an audio integrated circuit (10) capable of converting digital audio data into electrical audio signals, connected to or integrated with a memory (11) for providing digital audio data to the audio integrated circuit. The memory has an input (16) through which digital audio data can be uploaded to the memory during the packaging process. A speaker (14) receives electrical audio signals from the audio integrated circuit (10) for reproducing corresponding sound signals. A battery (13) is connected to power the audio integrated circuit and the transducer, and a manually actuatable switch (15) causes the audio integrated circuit to operate to receive digital audio data from the memory and to provide electrical audio signals to the speaker (14) for reproduction of audio material.

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, EPO-Internal, PAJ

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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